



**Michigan Department of Environmental Quality
Waste and Hazardous Materials Division**

SOLID WASTE DISPOSAL AREA CONSTRUCTION PERMIT

This construction permit is issued under the provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451 as amended, MCL 324.11501 et seq, to permit the construction of a solid waste disposal area (Facility) in the state of Michigan. This permit does not obviate the necessity of obtaining other authorization as may be required by state law.

FACILITY NAME: Carleton Farms Landfill

PERMITTEE/FACILITY OWNER: Republic Services of Michigan I, LLC

PROPERTY OWNER: Republic Services of Michigan I, LLC

TYPE OF FACILITY: Municipal Solid Waste Landfill and Municipal Solid Waste Incinerator Ash Landfill

FACILITY ID: 390701

COUNTY: Wayne

PERMIT NUMBER: 4078

ISSUE DATE: June 12, 2006

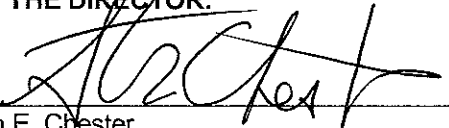
EXPIRATION DATE: One year from date of issuance unless development of the Facility begins within the year.

FACILITY DESCRIPTION: The Carleton Farms Landfill, a Municipal Solid Waste Landfill and a Municipal Solid Waste Incinerator Ash Landfill, consists of 664.08 acres located in Section 36, T4S, R8E, Sumpter Township, Wayne County, Michigan. The Facility is identified in Attachment A and is fully described in this permit.

RESPONSIBLE PARTY: Mr. Scott Johnson, General Manager
Republic Services of Michigan I, LLC
P O. Box 634
New Boston, Michigan 48164
734-654-3615

This permit is subject to revocation by the Director of the Michigan Department of Environmental Quality (Director) if the Director finds that the disposal area is not being constructed or operated in accordance with the approved plans, the conditions of a permit or license Part 115, or the rules promulgated under Part 115. This permit shall be available through the applicant during its term and remains the property of the Director. Failure to comply with the terms and provisions of this permit may result in legal action leading to civil and/or criminal penalties as stipulated in Part 115.

THIS PERMIT IS NOT TRANSFERABLE UNLESS PRIOR AUTHORIZATION HAS BEEN OBTAINED FROM THE DIRECTOR.


Steven E. Chester
Director
Michigan Department of Environmental Quality

Permittee/Facility Owner: Republic Services of Michigan I, LLC
Facility Name: Carleton Farms Landfill
Construction Permit Number: 4078
Issue Date: June 12, 2006

The permittee shall comply with all terms of this permit and the provisions of Part 115 and its rules. This permit includes the permit application and any attachments to this permit.

1. The permittee shall construct the Facility in a manner that will not violate any state or federal law.
2. This permit authorizes the construction of the disposal area as defined in the Application for Permit to Construct a Solid Waste Disposal Area (Application) documents dated January 23, 2006, and received by the Michigan Department of Environmental Quality (MDEQ) on January 24, 2006. The new disposal area authorized by this permit shall not be utilized for the disposal of solid waste until an operating license for the disposal area is issued by the MDEQ.
3. The attached map (Attachment A) shows the Facility, the area permitted for construction, area(s) authorized for the placement and/or acceptance of solid waste, monitoring points, leachate storage units, site roads, and related appurtenances.
4. Issuance of this permit is based on the assumption that the information submitted by the Applicant in the Application dated January 23, 2006, received by the MDEQ on January 24, 2006, and any subsequent amendments is accurate. Any inaccuracies or deviations found in this information may be grounds for the revocation or modification of this permit and/or other enforcement action. The permittee shall inform the MDEQ's Waste and Hazardous Materials Division, Southeast Michigan District Supervisor, of any known inaccuracies and/or any deviation in the information of the Application that would affect the permittee's ability to comply with the applicable rules or permit conditions. This permit is issued based on MDEQ review of the Application, EQP 5506. The Application includes the following documents or their approved revisions that are incorporated by reference and become enforceable portions of this permit:
 - a. Application Form EQP 5506
 - b. Fee in the amount of \$1,750
 - c. Document titled "Application for Lateral & Vertical Expansion, Carleton Farms Landfill, Sumpter Township, Michigan," Volumes 1 and 2, prepared for Republic Services of Michigan I, LLC, by Shaw Environmental, Inc., dated January 2006 (received January 24, 2006), with revisions dated February 8, 2006 (received February 9, 2006), May 8, 2006 (received May 8, 2006), and May 16, 2006 (received May 18, 2006)
 - d. Engineering Drawings, numbered 1 through 33, in plan set titled "Design Plans for Phase IV Expansion, Carleton Farms Landfill, Sumpter Township, Wayne County, Michigan," prepared for Republic Services of Michigan I, LLC, by Shaw Environmental, Inc., dated January 2006 (received January 24, 2006), with revisions dated February 8, 2006 (received February 9, 2006), May 8, 2006 (received May 8, 2006), and May 16, 2006 (received May 18, 2006)
5. The sampling parameters and monitoring frequencies are outlined in the Hydrogeological Monitoring Plan. The sampling results shall be submitted to the MDEQ's Waste and Hazardous Materials Division, Southeast Michigan District Office.
6. **VARIANCES:** None
7. **SPECIAL CONDITIONS:**
 - a. The applicant will upgrade all unconstructed areas (excluding the vertical expansion) to account for the effects of consolidation settlement on the leachate collection pipes. Calculations must be provided to document that the bottom slope of the leachate collection pipes will be a minimum of

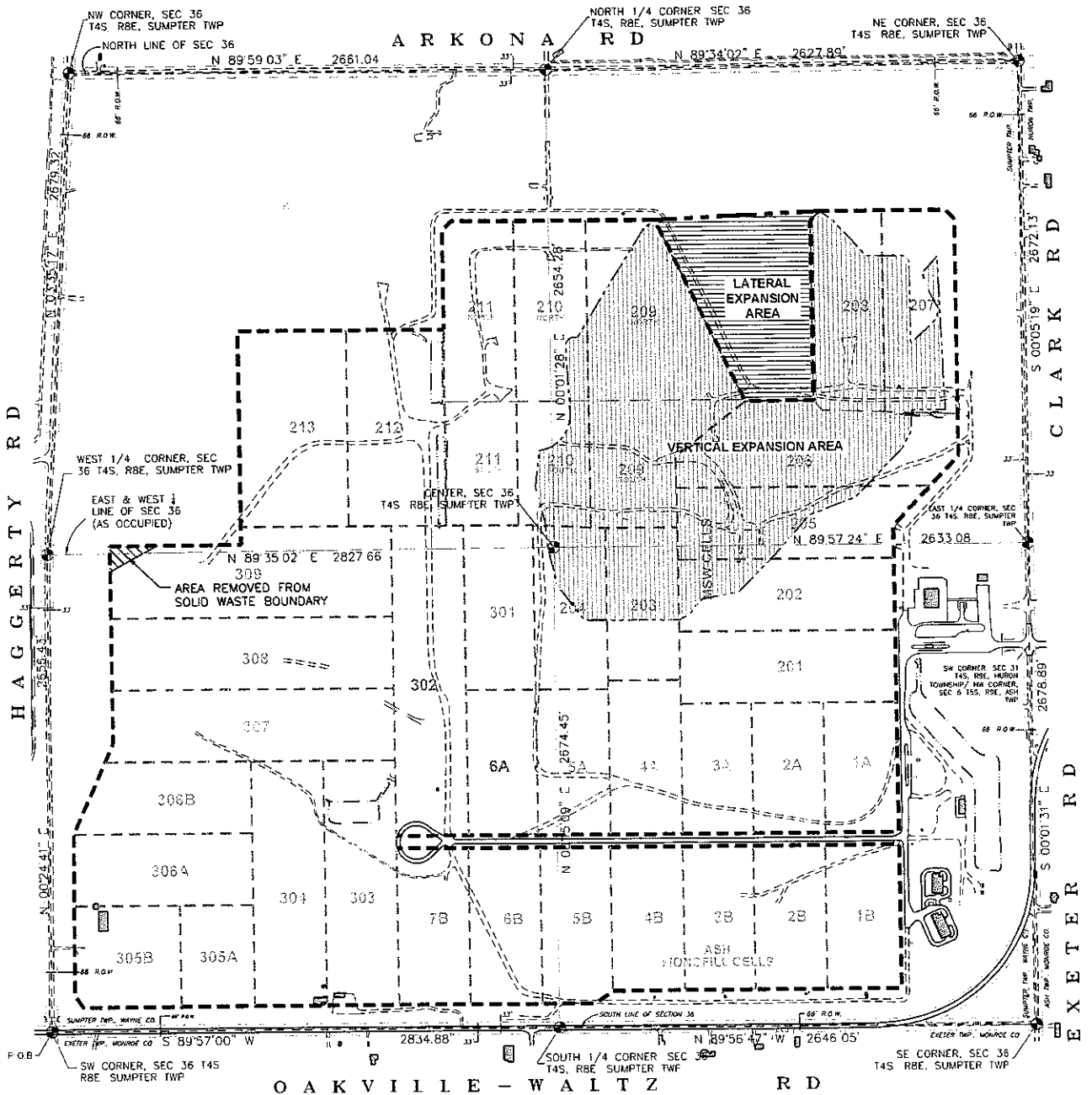
Permittee/Facility Owner: Republic Services of Michigan I, LLC
Facility Name: Carleton Farms Landfill
Construction Permit Number: 4078
Issue Date: June 12, 2006

1 percent (in a direction to intercept liquid flow) after consolidation settlement. The necessary revised engineering documents and drawings must be submitted to the Southeast Michigan District Office, Waste and Hazardous Materials Division, for review and approval prior to construction.

- b. The "Odor Contingency Plan" and "Sludge Disposal Odor Control Plan" attached in Appendices C and D, respectively, of the Operations Plan in Volume 2 of the document titled "Application for Lateral & Vertical Expansion, Carleton Farms Landfill, Sumpter Township, Michigan" are not considered part of the approved Application documents for this Permit. These documents were developed pursuant to enforcement negotiations citing nuisance odor violations at the site and, to date, have not been approved by the MDEQ.
- 8 **TERM:** This construction permit shall expire one year after the date of issuance, unless development under the construction permit is initiated within that year.

END OF PERMIT

ATTACHMENT A



Shaw Shaw Environmental, Inc.

This drawing represents intellectual property of Shaw Environmental, Inc. Any modification to the original by other than Shaw Environmental, Inc. personnel voids its original purpose and as such is rendered void. Shaw Environmental, Inc. will not be held liable for any changes made to this document without express written consent of the original.

DATE 02/08/06
DWN DGS
APP DJP
REV NAM
PROJECT NO
119231

REPUBLIC SERVICES OF MICHIGAN I, LLC
CARLETON FARMS LANDFILL
SUMPTER TOWNSHIP, MICHIGAN
**CONSTRUCTION APPLICATION
LEGAL DESCRIPTION**

XREF Files: IMAGE Files: CEUSpo2500v3.jpg
RV-SOIL1.jpg
RV-SOIL1-text.jpg
tp-cf.jpg

File: N:\CADDATA\DWG\REPUBLIC\CF-119231 PHASE 4 EXPANSION\PROJECT DWGS\CONST APP\LVCF_CONS APP PLAN ST.dwg Layout: FIG1 LEGAL DESC User: nancy.mcpherson Feb 08, 2006 - 10:36am

**REPUBLIC SERVICES OF MICHIGAN I, LLC
CARLETON FARMS LANDFILL
Waste Data System Number 390701
FACT SHEET
May 15, 2006**

FACILITY INFORMATION:

Carleton Farms Landfill (Facility) is a 664.08-acre site located at 28800 Clark Road, Section 36, Sumpter Township, Wayne County. This Type II facility is owned and operated by Republic Services of Michigan I, LLC.

Originally, the Facility was owned by City Management Corporation, which sold the Facility to USA Waste System, Inc., which then sold it to Waste Management, Inc., on July 15, 1998. The current owner, Republic Services of Michigan I, LLC, purchased the Facility and received control of the site on February 1, 1999.

The Facility receives municipal solid waste (MSW) incinerator ash and Type II waste. There is no other contiguous or on-site disposal unit at the landfill.

The Facility, previously known as Carleton Farms, Inc. (CFI), was initially permitted under the Solid Waste Disposal Area Construction Permit Number 0244 issued on August 30, 1991. On August 2, 1993, the Facility received Solid Waste Disposal Area Construction Permit Number 0292 for a horizontal expansion of the MSW cells (not including the MSW ash monofill cells.) On January 20, 1995, the Facility received Solid Waste Disposal Area Construction Permit Number 0310 for a vertical expansion of the MSW cells taking precedent over Construction Permit Number 0292. On March 14, 1995, Construction Permit Number 0316 was issued for a vertical expansion of the MSW cells and it superseded Construction Permit Number 0310. On June 16, 1997, Construction Permit Number 0351 was issued for the vertical and horizontal expansion of the MSW cells and the MSW incinerator ash monofill (AM) cells. A construction permit was issued on July 11, 2000. This permit, Construction Permit Number 0383, modified the AM Cells 3B-7B leachate collection layer.

Construction Permit Number 4078 issued on June 12, 2006, is for a lateral expansion of 15.01 acres in the northeast portion of the MSW landfill between two currently permitted landfill cells and a 68.25-acre vertical expansion, which will overlie the lateral expansion and some existing permitted areas. In addition, a previously permitted area of 0.43 acres has been removed from the solid waste footprint in the northwest portion of the MSW landfill in order to maintain a setback from a wetland area. The total resulting solid waste footprint is 402.41 acres. The applicant estimates that this expansion will yield approximately 10,455,654 cubic yards of additional airspace and extend the estimated life of the site by approximately 3.21 years.

DESIGN:

The entire landfill is constructed over a minimum ten feet natural clay barrier. The natural clay barrier is overlain by two or three feet of recompacted clay or a geosynthetic clay liner (GCL) and a synthetic liner. The current permitted liner design calls for an 80-mil High Density Polyethylene (HDPE) synthetic liner in the composite liner design.

In addition, the following measures will be implemented for new ash disposal cells to assure that puncture of the liner is prevented:

- A minimum of five feet of ash will be maintained below disposal vehicles to minimize the potential liner puncture by disposal vehicles.
- A minimum five-foot lift of uncompacted ash waste will be placed above the leachate collection layer.
- Ash will be spread by a dozer operating over a minimum of five feet of ash.
- Ash waste is a refuse-derived fuel processed waste that does not contain long, sharp objects that can puncture the liner by a dozer operating over one foot of sand and five feet of uncompacted ash waste.

The leachate collection system consists of a six inch pipe (minimum) with a geonet geocomposite placed within a modified trench overlain by a one-foot thick sand drainage layer [minimum permeability of 1×10^{-3} centimeter/second (cm/sec)], overlain by another one-foot thick protective soil layer (minimum permeability of 1×10^{-4} cm/sec). This leachate collection system design has been utilized for all MSW cell construction and all AM cell construction prior to calendar year 2000.

With the approval of the construction permit modification in 2000, AM cells 3B-7B's sand layer for the leachate collection system was modified. The new design consisted of a geonet geocomposite overlain by a one-foot thick sand drainage layer with a minimum permeability of 1×10^{-3} cm/sec.

As approved by the DEQ on August 21, 2002, the leachate collection system design was modified (for all future cells) by allowing the use of the geonet geocomposite to be optional and the sand drainage layer to have a minimum permeability of 1×10^{-2} cm/sec when a geocomposite is not used and a minimum permeability of 1×10^{-3} cm/sec when a geocomposite is used. The 1-foot protective soil layer (minimum permeability of 1×10^{-4} cm/sec) is still part of the design.

Under a Special Condition in the current Permit the Facility will upgrade the design of the perforated leachate collection pipes in all unconstructed cells to ensure a bottom slope of 1% or greater after consolidation settlement.

The final cover design for the MSW cells consists of (from bottom to top) 18 inches of recompacted clay, a 40-mil Linear Low Density Polyethylene (LLDPE) liner, 24 inches of protective soil, and a 6-inch vegetative growth layer. The final cover design for the AM cells consists of (from bottom to top) 24 inches of recompacted clay, a 40-mil LLDPE liner, 24 inches of protective soil, and a 6-inch vegetative growth layer.

The conceptual design of the Facility's gas collection and control system is provided in the "Landfill Gas Collection and Control System Design Plan," dated July 2004 and revised in February and May 2006. This plan provides a design meeting the minimum requirements of the Federal New Source Performance Standards for MSW landfills (NSPS). Additionally, in accordance with an enforcement action related to nuisance odor violations and to meet the requirements of R 299.4433 for the current Permit, the Facility has developed and is required to implement the provisions of a "Gas Collection Plan." The plan requires the Facility to evaluate for the presence of landfill gas, and, if necessary, provide for its collection and control prior to the timeframes required under the NSPS.

Approvals have been granted for Class A, B, and C materials to be used as alternate daily cover.

Leachate recirculation is currently authorized under an approved document referenced in the current license, Solid Waste Disposal Area Operating License Number 9034.

HYDROGEOLOGY:

A carbonate aquifer is being monitored below and around the Facility. The clay thickness between the landfill liner and the aquifer is 15 to 20 feet thick across the site. The groundwater flow direction was reversed in about 1994, resulting in changes to the Hydrogeological Monitoring Program as reflected in the May 20, 1997 amendment of that monitoring plan. In 2004, the water levels were changing due to the closure of a nearby quarry and discontinuing the aquifer dewatering effort. This may result in changes to the Hydrogeologic Monitoring Program in the future.

MONITORING:


The Facility is monitoring groundwater, surface water, and leachate following an approved Hydrogeologic Monitoring Program dated September 1994 and revised June 7, 1995; May 20, 1997; September 1997; May 18, 2001; June 26, 2002; and March 30, 2004. The current groundwater monitoring program consists of 10 upgradient monitoring wells and 17 downgradient monitoring wells. There are 10 piezometers used for water level elevation purposes only at this time. The 27 perimeter monitoring wells, 10 piezometers, and the three surface water monitoring points are identified on Attachment A.

Monitoring to date does not identify any environmental contamination from the Facility.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Carleton Farms Landfill, File

FROM: Steven R. Sliver, Chief, Storage Tank and Solid Waste Section, Waste and
Hazardous Materials Division 

DATE: June 12, 2006

SUBJECT: Decision Memo; Carleton Farms Landfill; Construction Permit; Waste Data
System Number 390701

An application for a construction permit was received in the Southeast Michigan District (District) on January 24, 2006. A decision by the Department of Environmental Quality (DEQ) on this application is required by June 12, 2006. The District has reviewed the application and determined that it is in compliance with the provisions of Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 115). Existing landfill operations at the site were determined to be in compliance with Part 115. Therefore, the District recommends issuance of this permit.

The recommendation for issuance of this construction permit is based on adequate resolution of technical deficiencies found in the Application for Permit to Construct a Solid Waste Disposal Area (Application) package and the entry of a Consent Order to resolve outstanding nuisance odor violations of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, Rule 901.

There are two Special Conditions in the Construction Permit. The first is related to a design upgrade to the leachate collection system for cells that were previously permitted, but not yet constructed. The Facility indicated that they were agreeable to such a condition. The second condition indicates that the DEQ did not evaluate the Sludge Disposal Odor Control Plan and Odor Contingency Plan attached to the Operations Plan in the Application documents and, therefore, these plans are not considered part of the approved Application documents. These plans were submitted pursuant to a proposed Consent Order and have not been approved to date.

The Waste and Hazardous Materials Division, Storage Tank and Solid Waste Section, has reviewed the application form, the District's recommendation, and any other pertinent facts, and a determination has been made to issue the permit.

cc: Southeast Michigan

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Steven E. Chester, Director

THROUGH: Jim Sygo, Deputy Director

FROM: George W. Bruchmann, Chief, Waste and Hazardous Materials Division

DATE: June 12, 2006

SUBJECT: Solid Waste Disposal Area Construction Permit (Permit); Republic Services of Michigan I, LLC; Carleton Farms Landfill; Waste Data System Number 390701

Attached for your consideration and signature is the construction permit to be issued to Republic Services of Michigan I, LLC, Carleton Farms Landfill (Carleton), Type II facility.

This application is for a lateral expansion of 15.01 acres in the northeast portion of the municipal solid waste (MSW) landfill between two currently permitted landfill cells and a 68.25-acre vertical expansion that will overlie the lateral expansion and some existing permitted areas. In addition, a previously permitted area of 0.43 acre has been removed from the solid waste footprint in the northwest portion of the MSW landfill in order to maintain a setback from a wetland area. The total resulting solid waste footprint is 402.41 acres. The applicant estimates that this expansion will yield approximately 10,455,654 cubic yards of additional airspace and extend the estimated life of the site by approximately 3.21 years.

The attached recommendation for issuance of this Permit is based on adequate resolution of technical deficiencies found in the Application for Permit to Construct a Solid Waste Disposal Area (Application) package and the entry of an Administrative Order to resolve outstanding nuisance odor violations of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). The Administrative Order provides for the ceasing of the acceptance of wastewater treatment plant sewage sludge by August 1, 2006 followed by a 90 day moratorium. The Administrative Order includes provisions for future acceptance of the sludge only upon DEQ approval of a sludge acceptance plan.

There are two Special Conditions in the Permit. The first is related to a design upgrade to the leachate collection system for cells that were previously permitted, but not yet constructed. Carleton indicated that they were agreeable to such a condition. The second condition indicates that the DEQ did not evaluate the Sludge Disposal Odor Control Plan and Odor Contingency Plan attached to the Operations Plan in the Application documents, and therefore, these plans are not considered part of the approved Application documents. These plans were submitted pursuant to a proposed Administrative Order and have not been approved to date.